

**Listing of Claims:**

1. (Previously Presented) A method for measuring auditory evoked potentials of an auditory system of a patient or animal body, said comprising:  
surgically implanting at least two pickup electrodes in the temporo-occipital area inside said body,  
picking up electrical signals resulting from neuronal activity of said auditory system by means of said at least two pickup electrodes, and  
producing signals representative of neuronal activity of said auditory system from said electrical signals sensed by said pickup electrodes.
2. (Previously Presented) The method according to claim 1 wherein said at least two extracochlear pickup electrodes are surgically implanted in the temporo-occipital area of said body, so that a line linking said pickup electrodes is substantially parallel to the cerebral trunk of said body.
3. (Previously Presented) The method according to claim 1 wherein said electrical signals have an amplitude between  $0.1\ \mu\text{V}$  and  $10\ \mu\text{V}$ .
4. (Previously Presented) The method according to claim 1 further comprising stimulating said auditory system by stimulation means implanted in said auditory system, thereby generating said neuronal activity of said auditory system.

5. (Previously Presented) The method according to claim 4 wherein said stimulation means are implanted in the cochlea of said auditory system.

6. (Previously Presented) The method according to claim 4 wherein said stimulation means are implanted outside of the cochlea of said auditory system.

7. (Previously Presented) The method according to claim 1 further comprising acoustically stimulating said auditory system by stimulation means implanted in said auditory system, thereby generating said neuronal activity of said auditory system.

8. (Previously Presented) The method according to claim 1 further comprising mechanically stimulating said auditory system by a vibrator implanted in said auditory system, thereby generating said neuronal activity of said auditory system.

9. (Previously Presented) The method according to claim 1 further comprising electrically stimulating said auditory system by at least one stimulation electrode implanted in said auditory system, thereby generating said neuronal activity of said auditory system.

10. (Previously Presented) The method according to claim 9 wherein said at least one stimulation electrode forms a stimulation dipole which is surgically implanted so as to be substantially perpendicular to a line linking said at least two pickup electrodes.

11. (Previously Presented) The method as in claim 10 further comprising positioning said stimulation dipole with respect to said at least two pickup electrodes so as to reduce stimulation artifact in said electrical signals resulting from neuronal activity of said auditory system.

12. (Previously Presented) The method according to claim 1 further comprising:  
surgically implanting a plurality of electrodes in the temporo-occipital area in said body, and  
selecting said at least two pickup electrodes and at least one stimulation electrode from said plurality of electrodes, based on quality of signals detected by said pickup electrodes.

13. (Previously Presented) The method according to claim 12 further comprising selecting a pickup reference electrode and a stimulation reference electrode from said plurality of electrodes.

14. (Previously Presented) The method according to claim 1 further comprising stimulating at least a portion of said auditory system by means of at least one surgically implanted vibrator.

15. (Previously Amended) The method as in claim 1 further comprising amplifying said electrical signals resulting from neuronal activity of said auditory system, and transmitting the amplified electrical signals through the skin of said body, and producing said signals

representative of neuronal activity of said auditory system from said transmitted electrical signals.

Claims 16-32 (Cancelled)